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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,309	08/13/2001	Yun-Won Yang	P67047US0	4693

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EXAMINER

TUCKER, WESLEY J

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,309

Applicant(s)

YANG ET AL.

Examiner

Wes Tucker

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,396,941 to Bacus et al.

3. With regard to claim 1, Bacus discloses an enlarged digital image providing method using data communication networks, the method for providing a digital image from a server to a client via digital networks and providing an enlarged digital image relative to a designated domain as a client viewing a displayed image designates a specific domain of the displayed image for request of enlarged display (column 7, lines 5-14 and column 10, lines 58-67). Bacus discloses a system of obtaining images from a microscope at multiple magnifications and resolutions and those images can be manipulated and viewed using a network and Internet browser connecting consoles with the microscope and image obtaining system.

4. Bacus further discloses creating an original digital image document (Level = N) via shooting an object (column 5, lines 65-67). Bacus uses a CCD in conjunction with the microscope to obtain images.

5. Bacus further discloses serially creating at least one reduced image document (Level = N - 1 - Level = 1) having a resolution lower than the original digital image document based on the original digital image document (column 6, lines 25-40). Bacus discloses obtaining 80 tiles or partial images (column 5, lines 45-47). Each of these tiles can then be viewed individually and the appropriate portion to be viewed according to the size of the display is calculated which is effectively compressing the image or partial image and reducing the resolution to lower level.

6. Bacus further discloses creatively dividing the serially created reduced image documents and the original digital image document into a multiplicity of segmental image documents (column 6, lines 42-53). Bacus discloses allowing the user to select partial images from the original tile image and further obtaining image segments from the image at a higher magnification and a higher resolution.

7. Bacus further discloses storing in a storage at server side each of the multiplicity of the segmentally divided created image documents, reduced level information for indicating reduced image level and position information (X, Y) for indicating positions of entire image document before division (column 7, lines 1-14).

Once the divided and subdivided images are obtained they are stored for easy access along with (x, y) index coordinates.

8. Bacus further discloses providing as an initial display image a reduced image document (Level = 1) of final level out of the reduced image documents in response to request by a client for image display (column 6, lines 30-40).

9. Bacus further discloses receiving a request when a client designates a specific domain of a display image (Level = r , $1 < r < N - 1$) currently displayed on a display window as a requested enlarged domain and requests transmission of enlarged image (Level = $r + 1$) for enlarged display of the domain (column 6, lines 30-40). Bacus discloses compressing the image to fit a particular display if requested by the user. Here the compressed image is interpreted as the level of r and the uncompressed image is interpreted as the level of $r+1$.

10. Bacus further discloses transmitting from server side to client side at least one segmental image document (Level = $r + 1$) necessary for constructing an image of requested enlarged domain in response to contents of received request to prompt the transmitted segmental image document to be combined for implementation of displayed image (column 7, lines 5-14). Bacus discloses the way in which images at different resolutions are stored and retrieved either individually or to compose a bigger image as their coordinates are stored with them as well.

11. With regard to claim 2, Bacus discloses the method as defined in claim 1, further comprising the steps of receiving contents of a request when a client indicates a moved display domain to request a moved display for moving a domain currently displayed on a display window while an enlarged image ($\text{Level} = r'$, $2 < r < n$) is being viewed (column 10, lines 58-67). Here Bacus discloses using the images stored in the database to create a virtual microscope slide that will move the displayed domain according to a users request. The user will have to scroll across images that are too big for the display screen (column 6, lines 25-30).

12. Bacus further discloses transmitting from server side to client side at least one segmental image document ($\text{Level} = r'$) necessary for structuring an image of designated moved display domain based on the received request of contents, and enabling the selected segmental image document to be additionally provided from storage to client side (column 11, lines 1-4). Here Bacus discloses that the images are directly accessible from an Internet server.

13. With regard to claim 3, Bacus discloses the method as defined in claim 1, wherein segmental image documents created by dividing the sequentially reducibly created image documents are respectively of the same size at all levels (column 6, lines 39-42). All of the image tiles are the same size.

14. With regard to claim 4, Bacus discloses the method as defined in claim 2, wherein segmental image documents created by dividing the sequentially reducibly

created image documents are respectively of the same size at all levels (column 6, lines 39-42). All of the image tiles are the same size.

15. With regard to claim 5, Bacus discloses the method as defined in claim 1, wherein the original digital image documents and reduced image documents (Level = 1 - N) are provided as one group of image document style to be sequentially and alternatively displayed when a client views same (column 7, lines 5-15).

16. With regard to claim 6, Bacus discloses the method as defined in claim 2, wherein the original digital image documents and reduced image documents (Level = 1 - N) are provided as one group of image document style to be sequentially and alternatively displayed when a client views same (column 7, lines 5-15).

17. With regard to claim 7, Bacus discloses the method as defined in claim 1, wherein the original digital image documents and reduced image documents (Level = 1 - N) are created by dividing the multiplicity of image documents obtained by panoramic photographing according to segmental image documents and then combining same mosaically (column 6, lines 44-53). Bacus discloses a method of obtaining image tiles and assembling them in a mosaic with coordinate information. The images can then be viewed assembled or individually (column 7, lines 5-14).

18. With regard to claim 8, Bacus discloses the method as defined in claim 2, wherein the original digital image documents and reduced image documents (Level = 1

- N) are created by dividing the multiplicity of image documents obtained by panoramic photographing according to segmental image documents and then combining same mosaically (column 6, lines 44-53). Bacus discloses a method of obtaining image tiles and assembling them in a mosaic with coordinate information.

19. With regard to claim 9, Bacus discloses an enlarged digital image providing apparatus using data communication networks, the apparatus for providing a digital image from a server to a client via digital networks and providing an enlarged digital image relative to a designated domain as a client viewing a displayed image designates a specific domain of the displayed image for request of enlarged display (column 7, lines 5-14 and column 10, lines 58-67). Bacus discloses a system of obtaining images from a microscope at multiple magnifications and resolutions and those images can be manipulated and viewed using a network and Internet browser connecting consoles with the microscope and image obtaining system.

20. Bacus further discloses means for serially creating at least one reduced image document ($\text{Level} = N - 1 - \text{Level} = 1$) having a resolution lower than the original digital image document based on an original image document ($\text{Level} = N$) created via shooting an object (column 6, lines 25-40). Bacus discloses obtaining 80 tiles or partial images (column 5, lines 45-47). Each of these tiles can then be viewed individually and the appropriate portion to be viewed according to the size of the display is calculated which is effectively compressing the image or partial image and reducing the resolution

to lower level. Bacus also uses a CCD in conjunction with the microscope to obtain images via shooting an object (column 5, lines 65-67).

21. Bacus further discloses means for creatively dividing the serially created reduced image documents and the original digital image document into a multiplicity of segmental image documents (column 6, lines 42-53). Bacus discloses allowing the user to select partial images from the original tile image and further obtaining image segments from the image at a higher magnification and a higher resolution.

22. Bacus further discloses means for storing in a storage at server side each of the multiplicity of the segmentally divided created image documents, reduced level information for indicating reduced image level and position information (X, Y) for indicating positions of entire image document before division (column 7, lines 1-14). Once the divided and subdivided images are obtained they are stored for easy access along with (x, y) index coordinates.

23. Bacus further discloses communication means for communicating with client via data communication networks to receive client request and to respond thereto (column 11, lines 1-6).

24. Bacus further discloses image transmission control means for receiving a request when a client designates a specific domain of a display image (Level = r, $1 < r < N - 1$) currently displayed on a display window as a requested enlarged domain and

requests transmission of enlarged image ($\text{Level} = r + 1$) for enlarged display of the domain to select a segmental image document ($\text{Level} = r + 1$) necessary for constituting an image for requested enlarged domain and to allow the selected segmental image document to be provided to client side from the storage through the communication means, thereby combining the transmitted segmental image document to enable to constitute a display image (column 7, lines 5-14). Bacus discloses the way in which images at different resolutions are stored and retrieved either individually or to compose a bigger image as their coordinates are stored with them as well (column 7, lines 5-14). Bacus discloses the way in which images at different resolutions are stored and retrieved either individually or to compose a bigger image as their coordinates are stored with them as well.

25. With regard to claim 10, Bacus discloses the apparatus as defined in claim 9, wherein the image transmitting control means receives contents of a request when a client indicates a moved display domain to request a moved display for moving a domain currently displayed on a display window while an enlarged image ($\text{Level} = r'$, $2 < r < n$) is being viewed, and selecting at least one segmental image document ($\text{Level} = r'$) necessary for structuring an image of designated moved display domain based on the received request of contents (column 10, lines 58-67). Here Bacus discloses using the images stored in the database to create a virtual microscope slide that will move the displayed domain according to a users request. The user will have to scroll across images that are too big for the display screen (column 6, lines 25-30).

26. Bacus further discloses enabling the selected segmental image document to be additionally provided from storage to client side via communication means, thereby to allow a priorly transmitted segmental image document to be combined with an additionally transmitted segmental image document for constitution of an image of moved display domain (column 6, lines 30-36). The images are also partial images of a larger picture that can be combined to reform that picture.

27. With regard to claim 11, Bacus discloses the apparatus as defined in claim 9, wherein segmental image documents created by dividing the sequentially reducibly created image documents are respectively of the same size at all levels (column 6, lines 39-42). All of the image tiles are the same size.

28. With regard to claim 12, Bacus discloses the apparatus as defined in claim 10, wherein segmental image documents created by dividing the sequentially reducibly created image documents are respectively of the same size at all levels (column 6, lines 39-42). All of the image tiles are the same size.

29. With regard to claim 13, Bacus discloses the apparatus as defined in claim 9, wherein the original digital image documents and reduced image documents (Level = 1 - N) are provided as one group of image document style to be sequentially and alternatively displayed when a client views same (column 7, lines 5-15).

30. With regard to claim 14, Bacus discloses the apparatus as defined in claim 10, wherein the original digital image documents and reduced image documents (Level = 1 - N) are provided as one group of image document style to be sequentially and alternatively displayed when a client views same (column 7, lines 5-15).

31. With regard to claim 15, Bacus discloses the apparatus as defined in claim 9, wherein the original digital image documents and reduced image documents (Level = 1 - N) are created by dividing the multiplicity of image documents obtained by panoramic photographing according to segmental image documents and then combining same mosaically (column 6, lines 44-53). Bacus discloses a method of obtaining image tiles and assembling them in a mosaic with coordinate information. The images can then be viewed assembled or individually (column 7, lines 5-14).

32. With regard to claim 16, Bacus discloses the apparatus as defined in claim 10, wherein the original digital image documents and reduced image documents (Level = 1 - N) are created by dividing the multiplicity of image documents obtained by panoramic photographing according to segmental image documents and then combining same mosaically (column 6, lines 44-53). Bacus discloses a method of obtaining image tiles and assembling them in a mosaic with coordinate information. The images can then be viewed assembled or individually (column 7, lines 5-14).

33. With regard to claim 17, Bacus discloses an apparatus for providing an enlarged digital image, the apparatus providing a digital image to a client via a digital

network and transmitting an enlarged digital image of a designated domain of the digital image being viewed by the client in response to a client's request (column 11, lines 1-7).

34. Bacus further discloses the apparatus comprising data storage means for storing "L"th-level partial images obtained by dividing a "L"th-level image of lower resolution by "j" (where "j" and "L" are natural numbers) (column 6, lines 1-15), "M"th-level partial images obtained by dividing a "M"th-level image of higher resolution by "k" (where "k" and "M" are natural numbers, "j"<"k", and "L"<"M") (column 6, lines 44-53), position information (X, Y) intended to map the "M"th-level partial images to positions of the "L"th-level image or "L"th-level partial images, and reduction level information intended to represent reduction levels by which the "L"th-level image is reduced to the "M"th-level image (column 6, lines 33-36 and 44-53). Bacus discloses an image of high resolution obtained from the combination of partial image tiles. These are considered equivalent to the Lth level partial images. The image can be further enhanced by having the user designate an area in the original full image and further creating multiple partial images of higher resolution and magnification. These are considered the Mth level partial images. The positions of theses images in relation to the overall X-Y coordinates are stored with the images.

35. Bacus further discloses communication means for receiving the client's request and responding to the client's request while communicating with the client; and image transmission control means for extracting one of the "M"th-level partial images having position information of a designated domain or neighboring designated domain

from the data storage means and transmitting the "M"-th-level partial image to the client when enlargement of the designated domain of one of the "L"-th-level partial images is requested (column 6, lines 44-53 and column 7, lines 5-15 and column 11, lines 1-7). Bacus discloses that a user is able to select areas of the image and request higher magnification and higher resolution images from a server over the Internet and the server is able to respond due to X-Y coordinate information and file structure.

36. With regard to claim 18, Bacus further discloses the apparatus as set forth in claim 17, wherein, if an image having resolution higher than the "M"-th-level image exists, the data storage means stores the "M"-th-level partial images, the position information (X, Y) and the reduction level information while considering the "M"-th-level image and the image having resolution higher than the "M"-th-level image as the "L"-th level image and the "M"-th-level image, respectively (column 6, lines 33-36 and 44-53). In the invention of Bacus the user is able to select portions of the image and generate higher resolution/magnification images of that image accordingly. This is interpreted as storing higher-level resolution images as multiple partial images.

37. With regard to claim 19, Bacus discloses the apparatus as set forth in claim 17, wherein, when panning of a plurality of displayed "M"-th-level partial images is requested by the client, the image transmission control means extracts remaining "M"-th-level partial images except for the displayed "M"-th-level partial images from the data storage means to construct a panned image, transmits the extracted remaining "M"-th level partial images to the client, and displays the panned image in which the

displayed "M"th-level partial images are combined with the extracted remaining "M"th-level partial images (column 10, lines 58-67). Here Bacus discloses using the images stored in the database to create a virtual microscope slide that will move the displayed domain according to a users request. The user will have to scroll across images that are too big for the display screen (column 6, lines 25-30).

38. With regard to claim 20, Bacus discloses the apparatus as set forth in claim 18, wherein, when panning of a plurality of displayed "M"th-level partial images is requested by the client, the image transmission control means extracts remaining "M"th-level partial images except for the displayed "M"th-level partial images from the data storage means to construct a panned image, transmits the extracted remaining "M"th level partial images to the client, and displays the panned image in which the displayed "M"th-level partial images are combined with the extracted remaining "M"th-level partial images (column 10, lines 58-67). Here Bacus discloses using the images stored in the database to create a virtual microscope slide that will move the displayed domain according to a users request. The user will have to scroll across images that are too big for the display screen (column 6, lines 25-30).

39. With regard to claim 21, Bacus discloses the apparatus as set forth in claim 17, wherein the "M"th-level partial images are obtained by dividing the "M"th-level partial image by a same number or different numbers in vertical and horizontal directions (column 6, lines 55-60). Here the computer determines how many partial images are needed for the designated area.

40. With regard to claim 22, Bacus discloses the apparatus as set forth in claim 18, wherein the "M"th-level partial images are obtained by dividing the "M"th-level partial image by a same number or different numbers in vertical and horizontal directions (column 6, lines 55-60). Here the computer determines how many partial images are needed for the designated area.

41. With regard to claim 23, Bacus discloses the apparatus as set forth in claim 19, wherein the "M"th-level partial images are obtained by dividing the "M"th-level image by a same number or different numbers in vertical and horizontal directions (column 6, lines 55-60). Here the computer determines how many partial images are needed for the designated area.

42. With regard to claim 24, Bacus discloses the apparatus as set forth in claim 20, wherein the "M"th-level partial images are obtained by dividing the "M"th-level image by a same number or different numbers in vertical and horizontal directions (column 6, lines 55-60). Here the computer determines how many partial images are needed for the designated area.

Claim Rejections - 35 USC § 103

43. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over
U.S. Patent 6,396,941 to Bacus et al.

44. With regard to claims 25-28, Bacus discloses the apparatus as set forth in claim 21, but does not expressly disclose wherein "k" is a square of "M". It would be an obvious design choice to choose any number for k that is evenly divisible into M such as a square.

Prior Art

45. Other art considered pertinent but not considered as follows:

U.S. Patent 6,708,309 to Blumberg

U.S. Patent 6,711,297 to Chang et al.

U.S. Patent 6,393,163 to Burt et al. (provided by applicant)

U.S. Patent 6,014,671 to Castelli et al. (provided by applicant)

Conclusion

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 703-305-6700. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wes Tucker

7-22-04

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